

# Public Safety Interoperable Communications in Arizona

*January, 2013*



Public Safety Interoperable  
Communications Office

# The Challenge of Interoperability



In Arizona, more than 500 fire, police, and emergency medical service agencies respond daily to emergency and life threatening incidents.

- Emergency responders need to share vital voice and data information across disciplines and jurisdictions to successfully respond to day-to-day incidents.
- The public safety community's goal is for emergency responders to communicate (via voice and data paths) - as needed, on demand, as authorized, at all levels of government and across all disciplines.

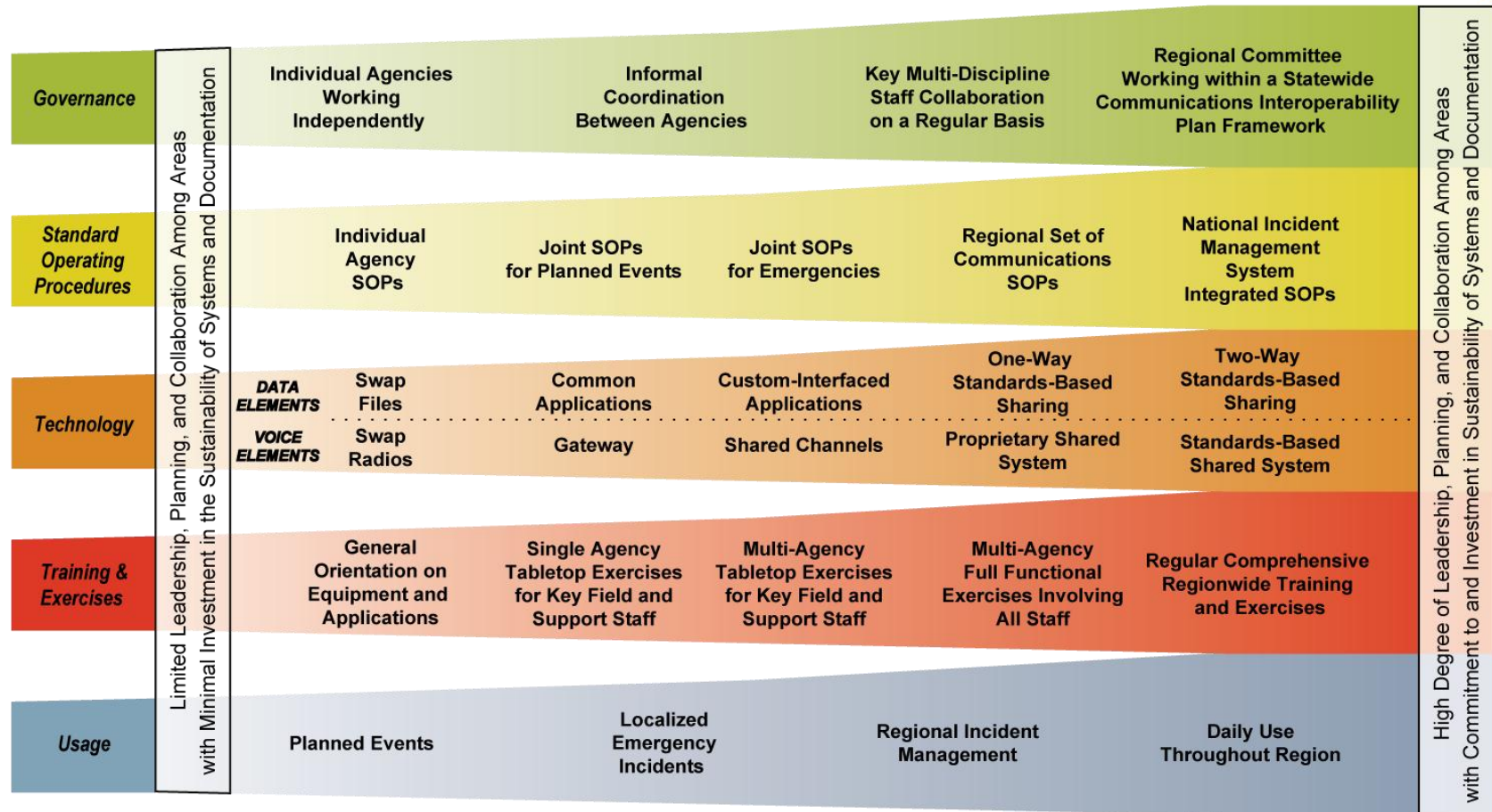
This is the significant challenge of Public Safety Communications Interoperability.

# PSIC Office



- The Public Safety Interoperable Communications (PSIC) Office in ADOA-ASET is responsible for advancing interoperable communications in Arizona with guidance from the Public Safety Communications Advisory Commission (PSCC).
- PSIC plays a crucial role in the facilitation of governance, standards, policy efforts, training, exercises and outreach to further interoperability across all first responder disciplines by:
  - Advancing Arizona’s Strategic Communications Interoperability Plan (SCIP)
  - Developing policies, standards, agreements and plans to advance interoperability
  - Identifying training, exercise and consulting resources for Arizona communities
  - Providing technical consultation on interoperable communications programs statewide
  - Supporting the PSCC and SIEC in performance of their missions
  - Engaging public safety stakeholders statewide

# SAFECOM Interoperability Continuum





Governance is a formalized system that provides a unified approach to decision-making to reflect shared objectives across multiple disciplines and jurisdictions. Strong governance is essential to interoperability because it provides a framework for planning, collaboration and implementation between and among multiple disparate communication systems and stakeholders.

## GOVERNANCE



# State Governance Bodies



- Public Safety Communications Advisory Commission (PSCC)
  - The Commission consists of a Chairman (the ADOA Director or his designee) and 14 commissioners who are appointed by the Governor.
  - Charged with providing recommendations to the PSIC office on the development of standards based systems that provide interoperability of public safety agencies' communications statewide.
- Statewide Interoperability Executive Committee (SIEC)
  - Five member sub-committee of the PSCC responsible for technical and operational recommendations to the PSCC.
  - Responsible for management of the UHF / VHF spectrums.
- The PSCC and SIEC are supported by three working groups
  - Technical & Operational Workgroup
  - Arizona Public Safety Broadband Network (AZPSBN) Workgroup
  - NIMS Communications Unit (NIMS-CU) Workgroup

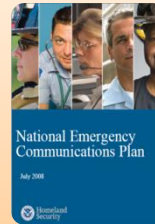
# AZ's Plan for Interoperable Communications



## National Emergency Communications Plan (NECP)

First published 2008, to be updated in 2013

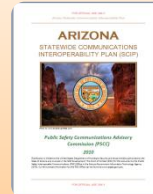
Identifies key areas for improvements and establishes benchmarks to measure the ability of public safety agencies to demonstrate response-level emergency communications.



## Statewide Communications Interoperability Plan (SCIP)

First published 2007, updated annually

Strategic: Defines Arizona's strategy for improving interoperable communications.



## PSIC Office Plan

Tactical: Describes how the PSIC Office operates to advance the SCIP and Interoperability.

## Strategic Initiatives

Initiative	Reporting Objective	Status
1. Establish a statewide interoperable communications system that meets the needs of all public safety agencies.	1.1. Develop a statewide interoperable communications system that meets the needs of all public safety agencies.	In Progress
2. Establish a statewide interoperable communications system that meets the needs of all public safety agencies.	2.1. Develop a statewide interoperable communications system that meets the needs of all public safety agencies.	In Progress
3. Establish a statewide interoperable communications system that meets the needs of all public safety agencies.	3.1. Develop a statewide interoperable communications system that meets the needs of all public safety agencies.	In Progress
4. Establish a statewide interoperable communications system that meets the needs of all public safety agencies.	4.1. Develop a statewide interoperable communications system that meets the needs of all public safety agencies.	In Progress
5. Establish a statewide interoperable communications system that meets the needs of all public safety agencies.	5.1. Develop a statewide interoperable communications system that meets the needs of all public safety agencies.	In Progress
6. Establish a statewide interoperable communications system that meets the needs of all public safety agencies.	6.1. Develop a statewide interoperable communications system that meets the needs of all public safety agencies.	In Progress
7. Establish a statewide interoperable communications system that meets the needs of all public safety agencies.	7.1. Develop a statewide interoperable communications system that meets the needs of all public safety agencies.	In Progress
8. Establish a statewide interoperable communications system that meets the needs of all public safety agencies.	8.1. Develop a statewide interoperable communications system that meets the needs of all public safety agencies.	In Progress
9. Establish a statewide interoperable communications system that meets the needs of all public safety agencies.	9.1. Develop a statewide interoperable communications system that meets the needs of all public safety agencies.	In Progress
10. Establish a statewide interoperable communications system that meets the needs of all public safety agencies.	10.1. Develop a statewide interoperable communications system that meets the needs of all public safety agencies.	In Progress



# NECP Goal 2 Assessments



- In 2011 PSIC worked with Arizona's 13 non-UASI counties to assess their ability to demonstrate response-level emergency communications during a routine event.
- Observed events included participation from 116 State and local public safety agencies and Non-Governmental Organizations (NGOs), 12 Tribal agencies and six Federal agencies.
- Each county received a detailed After Action Report (AAR) documenting the results of their observation and specific recommendations for improvement.
- Findings will help PSIC better target its policy, planning, and support services to address gaps and needs identified during the Goal 2 observations.



# NECP Initiatives and Milestones



- NECP Goal Two Assessments, Reporting, and Gap Closure

- [NECP Goal Two Results - Statewide Summary](#)
- [Arizona Compendium of Findings and Recommendations from National Emergency Communications Plan \(NECP\) Goal 2](#)
- Development of NECP Goal Two Gap Closure Action Plans, best practices, and templates.

- [Tracking Progress Towards Meeting Relevant NECP Initiatives and Milestones.](#)

- Nine initiatives completed, two still in progress:
  - » Tactical planning among Federal, State, local, and tribal governments occurs at the regional interstate level.
  - » Program nationwide interoperability channels into all existing emergency responder radios.



Formal written guidelines or instructions enable emergency responders to successfully coordinate an incident response across disciplines and jurisdictions. Clear and effective SOPs are essential in the development and deployment of any interoperable communications solution.

## STANDARD OPERATING PROCEDURES



# Key PSP & SOP Accomplishments



- Statewide Interoperable Communications Policies, Standards and Procedures (PSP) :
  - Arizona Interagency Radio System (AIRS) State Plan - Standard Operating Procedures
  - AIRS Memorandum of Understanding (MOU)
  - **New:** AIRS Improvement and Sustainability Plan
  - **Revised:** Arizona Minimum Equipment Standards (VHF, UHF, 700/800)
  - Arizona Interoperable Channels Plan and Priority Programming Guide
  - **Revised:** Arizona Communications Unit Training Coordination Procedure
  - **Revised:** Arizona Regional All-Hazards Communications Unit Recognition Procedure
  - **Revised:** NIMS Communications Unit (NIMS-CU) Workgroup Policies and Procedures

# Tactical Interoperable Communications Plan



- The Tactical Interoperable Communications Plan (TICP) is a “master communications document” that describes the current communications capabilities of a regional area.
  - Area Information
  - Governance Structure (Governance)
  - Policies and Procedures for Interoperable Equipment (SOPs)
  - Interoperability Equipment (Technology)
  - NIMS Communications Unit Leader Training (Training and Exercises)
  - Incident Plan for Tactical Communications (Usage)
- TICP serves as a critical resource for communications personnel during an incident to enable interoperability among disparate agencies in a region.
- By implementing this national standard, counties are in a position for responders from outside Arizona to assist with critical emergencies.
- Development of TICPs – 7 of 15 Counties Complete
- Arizona TICP Points of Contact are available on the PSIC website



Technology is a critical tool for improving interoperability, but it is not the sole driver of an optimal solution. Successful implementation of data and voice communications technology is supported by strong governance and is highly dependent on effective collaboration and training among participating agencies and jurisdictions.

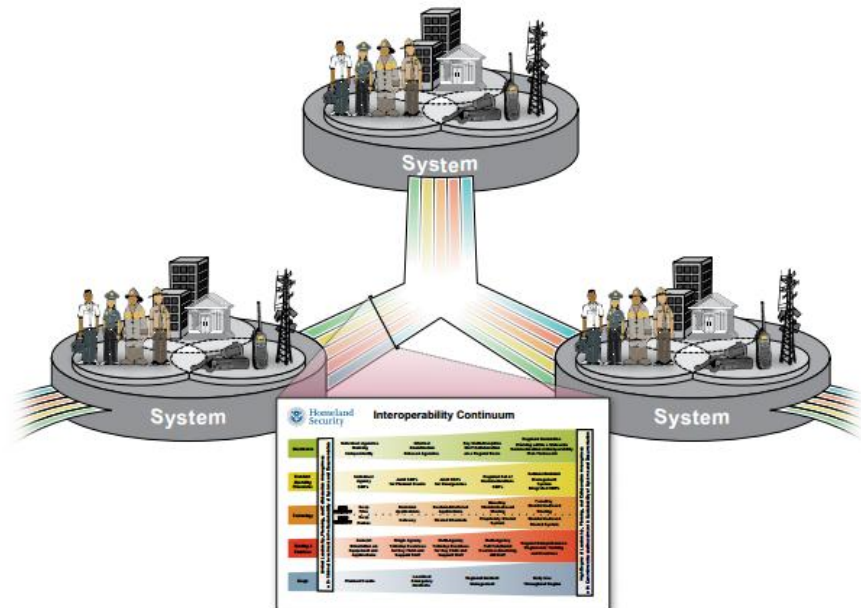
## TECHNOLOGY

Technology	DATA ELEMENTS	Swap Files	Common Applications	Custom-Interfaced Applications	One-Way Standards-Based Sharing	Two-Way Standards-Based Sharing
	VOICE ELEMENTS	Swap Radios	Gateway	Shared Channels	Proprietary Shared System	Standards-Based Shared System

# System-of-Systems Approach



- To achieve interoperable communications, Arizona is pursuing a system-of-systems approach.
- The connection of State systems to regional systems and regional systems to one another is recognized as an effective and cost efficient solution for long term interoperability.
- Compatible technology between jurisdictions alone will not make an agency interoperable; the jurisdictions must connect policies, procedures, technology, people, and exercise using the technology to achieve interoperability.



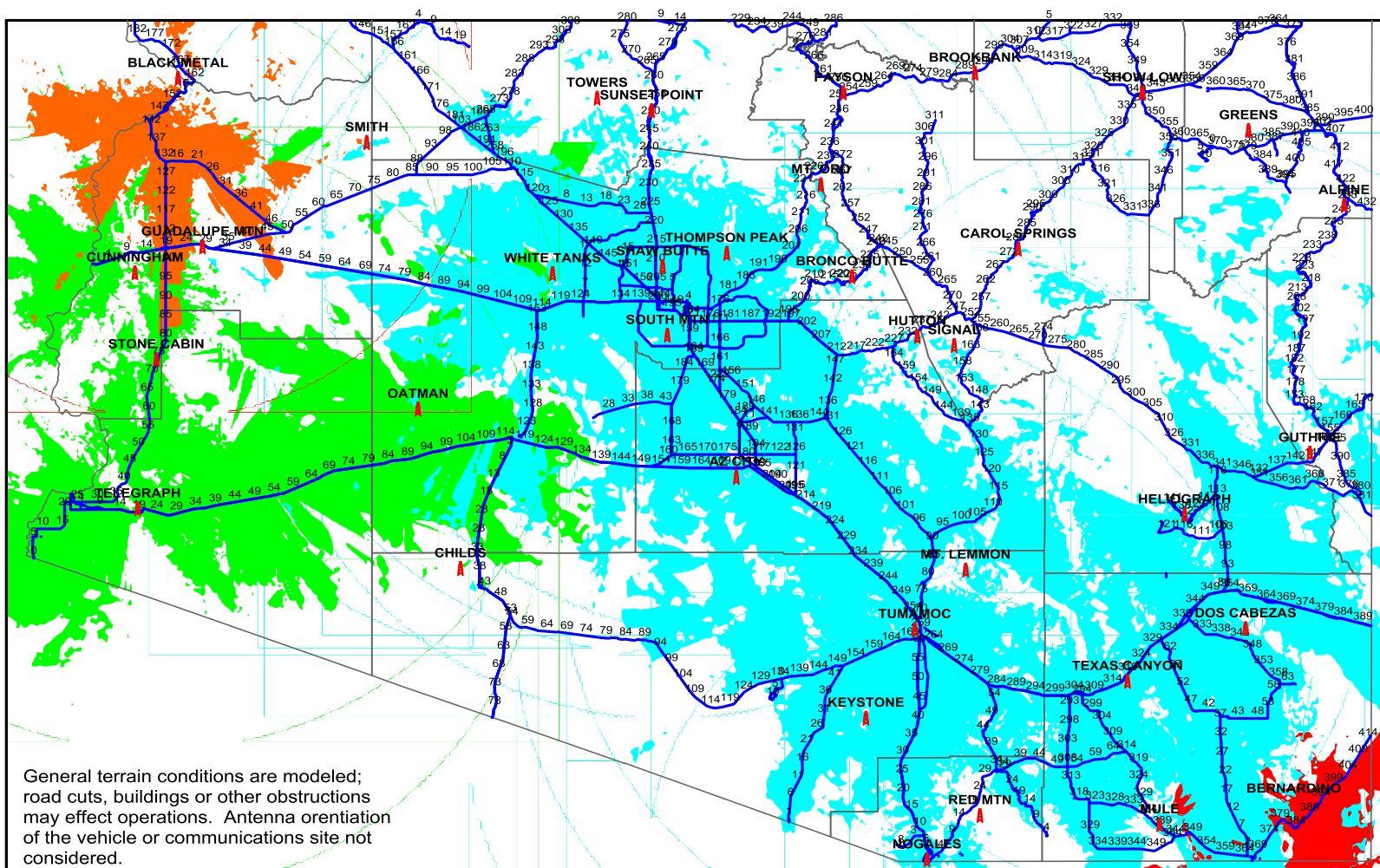
# RICO Project



- Partnership between DPS, YRCS, ADOT, PSIC to expand standards-based P25 700 MHz communications capability across the Southern border.
- Supported by the DPS upgraded microwave
- Utilizes the Yuma Regional Communications System (YRCS) Master Site Controller
- Conventional Channel Gateways enable patching of conventional channels with trunked talkgroups
- Connections with the State Emergency Operations Center (EOC) and Public Safety Answering Points (PSAP) are being established to tie the PSAPs in the region and the State EOC together for interoperability.



# YRCS / AzWINS Radio Coverage



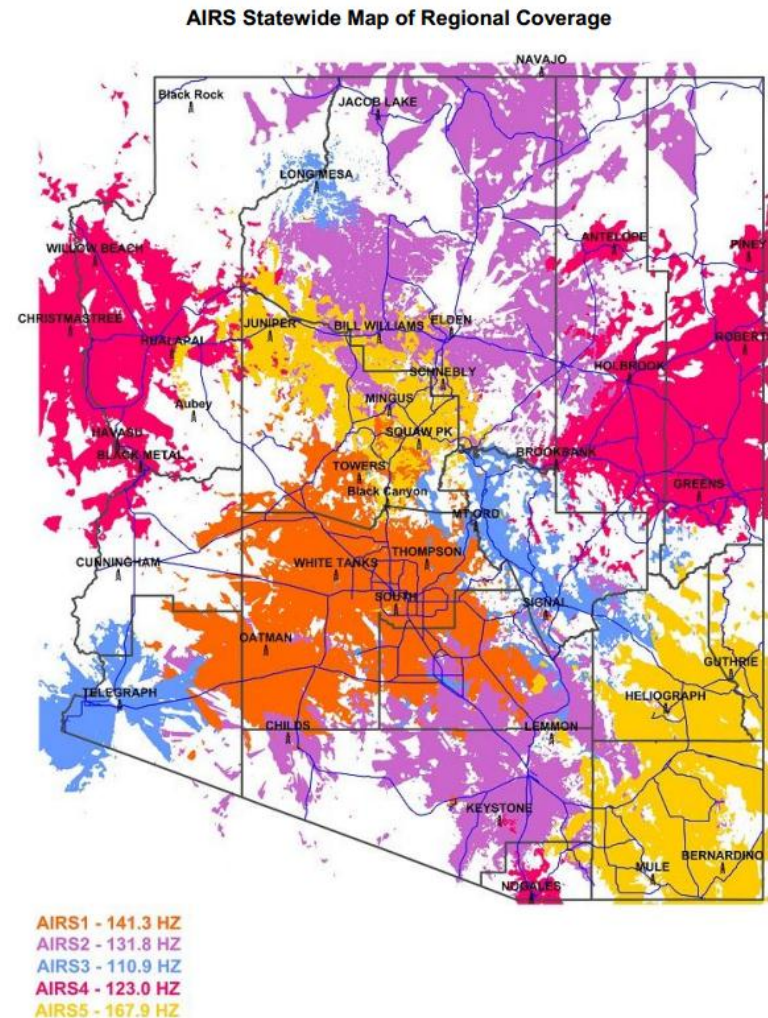
[www.azpsic.gov](http://www.azpsic.gov)

Public Safety Interoperable Communications Office

# Statewide Simple Interoperability (AIRS)



- Arizona Interagency Radio System (AIRS) is a suite of full-time, cross-banded mutual aid channels designed to provide interoperable communications.
- AIRS provides interoperability across all three major radio bands – VHF / UHF / 800 MHz (but is limited to a single conversation).
- Initial Build-out is complete:
  - 35 Sites provide coverage to all 15 counties
  - 3 Mobile Suites (1 DPS Communications Trailer, 2 DPS Fly-Away) and Semi-permanent fly-away suite located in Havasupai
  - State EOC connected to AIRS via Microwave Link
- Governance of AIRS has been formalized ([AIRS MOU](#), [AIRS SOP](#))
- AIRS Training Program developed including [Video](#), [Presentation](#) & [Lesson Plan](#).
- [AIRS Coverage Drive Test](#) Complete Dec, 2011
- [AIRS Improvement and Sustainability Plan](#) - Documents the process for local expansion of the AIRS system to address coverage gaps.



Statewide AIRS Predicted Regional Coverage for a UHF Mobile  
VHF & 800 MHz Coverage May Differ

# National Public Safety Broadband Network



## Goal:

By [Federal legislation](#), the First Responder Network (FirstNet) Authority has been tasked with building a nationwide wireless public safety broadband network (NPSBN) to be used by Federal, Tribal, State and Local public safety agencies/jurisdictions. Once built out, it will be run and maintained by FirstNet as a self-supporting, fee-based network.

- *Some already use data, but 4G LTE will allow more and faster data – video, building plans, real-time GIS mapping, etc.*
- *What will this cost? No one knows for sure, however, Arizona should be prepared to participate in the advancements which are offered.*

# Federal Legislation



- Provides \$7B for the build out of the national public safety wireless network
- Allocates the D-block spectrum to Public Safety
- Requires FirstNet to work with State, Local and Tribal entities
- Allows for funding through public/private partnership and the sharing of spectrum
- Provides \$135M nationally for states to perform outreach and collect data for input into planning by FirstNet on the national network

# State and Local Implementation Grant Program



- \$135M nationwide – 80/20 split
- Two phases
  - Introduction and Outreach – how the new technology may impact current governance and operations
  - Data collection – validate agency data, possible participants and possible shared infrastructure
- Outreach and Data collection to cover:
  - Law Enforcement, Fire, EMS, PSAP/dispatch, *ADOT and County DOTs, Public Works, Water Departments, etc.*
- Unlike DHS grants where funds are available locally – this is a State level grant where the State works with local and Tribal entities that provide input for inclusion into a response to FirstNet.



# State and Local Implementation Grant Program



## State's Role:

- To inform the agencies/jurisdictions of the project timeline, progress and the impacts of the new technology on current operations. *[Q3-Q4 2013]*
- To collect the State, Local and Tribal requirements *[Q1-Q3 2014]*
  - Coverage, possible participants, critical infrastructure and special circumstances
- To work with FirstNet on ensuring our requirements are communicated and to assist in figuring how to meet the statewide needs *[Q4 2013-Q4 2014]*
- To assess whether or not the final RFP supplied by FirstNet is adequate for statewide needs *[Q3 2015]*

# National Public Safety Broadband Network



## How to get involved and stay informed:

- Please track progress on the PSIC Office website [Broadband page](#)
- Detailed version of today's preview is on the website
- Sign up for our interested parties [email list](#)
- Contact [Michael Britt, PhD](#), PSIC Project Manager, 602-300-2633

Public Safety Interoperable Communications

SCIP NECP AIRS CASM COML Narrowband **Broadband**

**PSIC News & Updates**

- [Communications Unit Training Field Day, Phoenix AZ, February 20, 2013](#)
- [COML Course - Phoenix, AZ: January 26-27, February 2, 2013](#)
- [FFY 2013 Federal Homeland Security](#)

[www.azpsic.gov](http://www.azpsic.gov)

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# Public Safety Communications Evolution

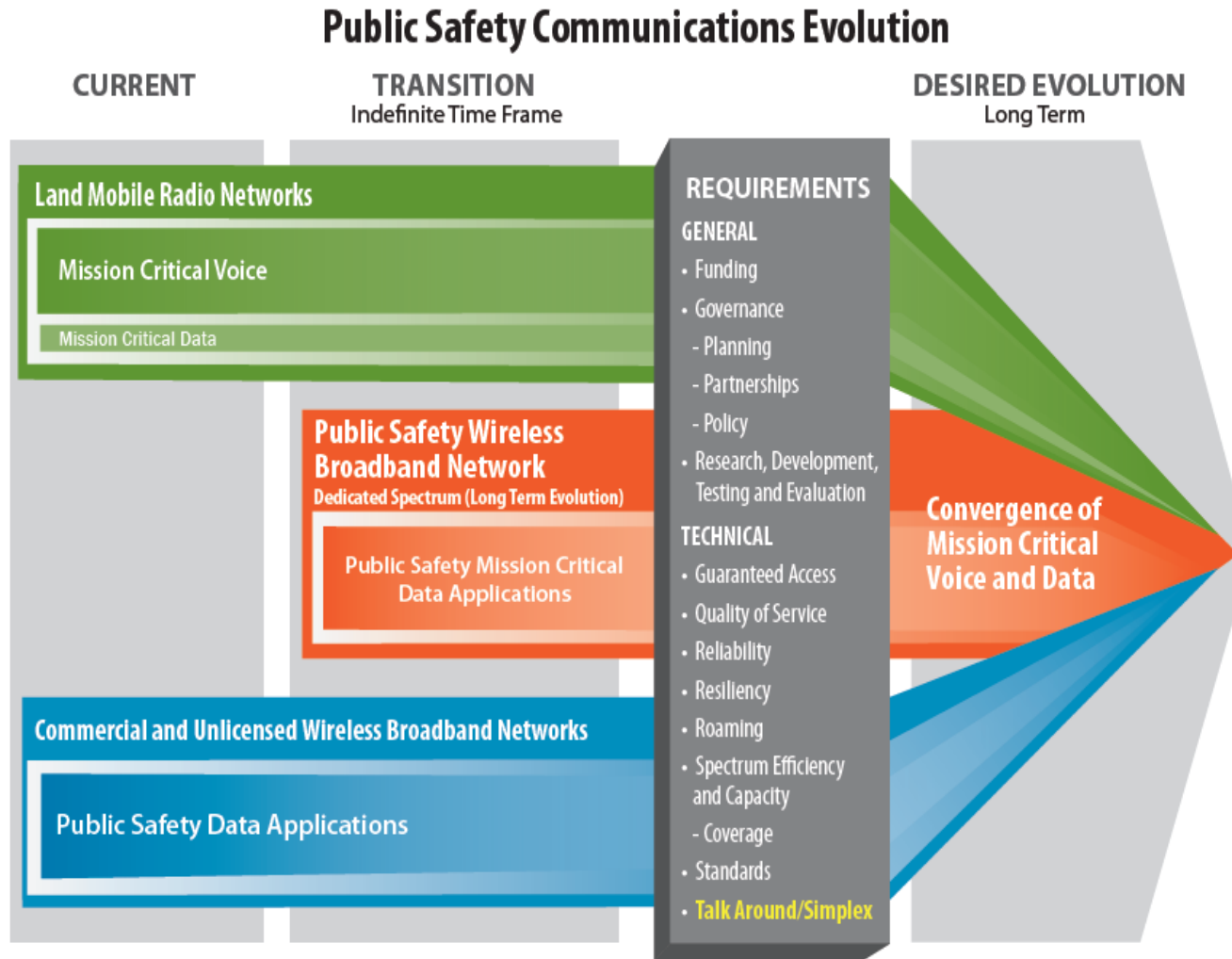


Figure 1: This graphic illustrates a public safety communications evolution by describing the long-term transition toward a desired converged future.



Implementing effective training and exercise programs is essential for ensuring that technology actually works as planned and that responders are able to show that they can effectively communicate using that technology.

## TRAINING & EXERCISES



# Communications Unit Leader (COML)



- A [COML](#) plans and manages the technical and operational aspects of the communications function during an all-hazards incident or event.
- PSIC has established a nationally recognized training and recognition program for COMLs.
- Since being established in 2009, over 190 Arizona students have completed the [All-Hazards COML course](#).

County	Students Trained
Apache	3
Cochise	26
Coconino	12
Gila	0
Graham	0
Greenlee	0
La Paz	1
Maricopa	79

County	Students Trained
Mohave	15
Navajo	2
Pima	20
Pinal	3
Santa Cruz	2
Yavapai	2
Yuma	26

# Communications Unit Technician (COMT)



- The All-Hazards COMT course trains emergency responders on practices and procedures common to communication technicians during all hazards emergency operations.
- Due to the highly technical nature of the training, course enrollment is limited to 15 students and is offered by invitation only.
- To date, three All-Hazards COMT courses have been held in AZ (48 students)
- Two additional courses are being planned in late spring 2013 (1 in South RAC, 1 in North RAC).

# Arizona Communications Unit Recognition Program



- Arizona Regional All-Hazards Communications Unit Recognition Procedure
  - Applies to those individuals who meet the recommended DHS guidelines for eligibility, training and experience for All-Hazards Communications Unit positions and are requesting Arizona Regional recognition
- All-Hazards Communications Unit Resource List
  - A directory of individuals who have been recognized at the Arizona Regional level by the National Incident Management System Communications Unit (NIMS-CU) Workgroup
  - The individuals on the Resource List have been certified by their agencies as having met all requirements for qualification in the position(s) indicated and that such qualification has been issued.
  - During an incident, if the need arises for resources that cannot be obtained locally, assistance may be rendered through mutual aid.
  - In accordance with NIMS, requests should be submitted using your agency's standardized resource-ordering procedures.
- As of January 2013: 19 COMLs Recognized, one COMT Recognized

# PSIC Exercise Activities



- PSIC is responsible for advocating for the inclusion of interoperable communications components into exercises and providing education to stakeholders on how to incorporate interoperable communications into exercises.
- PSIC works with ADEM to ensure communications are evaluated as a part of the annual statewide exercises.
- PSIC advocates for communications focused exercise technical assistance for Arizona through ICTAP:
  - 2009: Yuma Regional Tabletop Communications Exercise
  - 2013: Coconino County Tabletop Communications Exercise
  - Statewide Policy Workshop Conducted: December 11, 2012: [Effectively Incorporating Communications into Public Safety Exercises](#)



Usage refers to how often interoperable communications technologies are used. Local agencies rely on interoperable equipment for day-to-day situations and emergencies. Success in this element is contingent upon progress and interplay among the other four elements on the Interoperability Continuum.

## USAGE





# Activities



- The PSCC and SIEC each meet five times per year to approve interoperability projects and policies, hear updates from regional systems, provide guidance to and receive technical advice from workgroups and provide feedback to PSIC regarding advancement of SCIP initiatives.
  - All meetings now available via phone and web conference
  - Previous meetings available on YouTube
- PSIC staff regularly attend and present at conferences, workshops, expos, taskforces, and other meetings.
- PSIC also post updates to its website and communicates regularly by e-mail to its extensive (850+) interested parties list.

# Key Outreach Accomplishments



- Developed and implementing a Statewide Education and Outreach Plan in support of interoperable communications to encourage collaboration and educate policy makers and practitioners.
- The Plan provides outreach and education strategies and resources including detailed information on key topics (which change each year), such as:
  - [National Public Safety Broadband Network \(NPSBN\)](#)
  - [NECP Gap Closure](#) (Regional Interoperability Planning: CASM, TICPs, SCMPs and other resources)
  - [FCC Narrowbanding Compliance](#)

# Key 2013 Initiatives



- NECP Goal Two Gap Closure Projects, including TICP Development
- Planning for Public Safety Broadband
- Continue to Implement the Interoperable Communications Training Plan
- Develop and Implement a Strategy for Exercises Focused on or Incorporating Interoperable Communications
- Continue to Develop Regional Communications Governance Structures & Plans

# Questions? / Discussion?



## Thank You!

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